

**SUBJECT:** Enforcement Policy and Procedures for Occupational Exposure to Tuberculosis.

**Purpose:** To provide uniform inspection procedures and guidelines to be followed when conducting inspections concerning occupational exposure to tuberculosis (TB). Minnesota OSHA directives are intended to provide guidance to OSHA inspectors regarding use of OSHA standards to address Occupational Safety and Health hazards and do not provide guidance for an infection control policy for the purpose of protection of clients/patients.

**Scope:** This instruction applies OSHA-wide.

**References:**

1. "Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health-Care Settings," 2005 MMWR Vol. 54, No. RR-17, dated December 30, 2005 <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5417a1.htm>
2. 29 CFR 1910.134, "Respiratory Protection."
3. Federal OSHA Instruction CPL 02-00-106 "Enforcement Procedures and Scheduling for Occupational Exposure to Tuberculosis," dated February 9, 1996.
4. CPL 02-0.135, "Recordkeeping Policies and Procedures," dated January 24, 2013.
5. OSHA MEMORANDUM - Subject: "Tuberculosis and Respiratory Protection," July 30, 2004.
6. OSHA MEMORANDUM - Subject: "Tuberculosis and Respiratory Protection Enforcement," March 24, 2008.
7. "Guidelines for Environmental Infection Control in Health-Care Facilities", MMWR Vol. 52 No. RR-10, dated June 5, 2003. This document available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5210a1.htm>
8. "Prevention and Control of Tuberculosis in Correctional and Detention Facilities", MMWR Vol. 55 No. RR-09, Dated July 7, 2006. This document available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5509a1.htm>
9. Minnesota Department of Health Tuberculosis Prevention and Control Program, [www.health.state.mn.us/tb](http://www.health.state.mn.us/tb)

**Cancellation:** This instruction cancels CPL 2-2.48 CH-2, "Enforcement Policy and Procedures for Occupational Exposure to Tuberculosis," dated April 29, 2008.

**Background:**

In 1992, the rate of new cases of TB in the general U. S. population had increased 14 percent from 1985, reversing a 30-year downward trend. From 1992 to 2011, there has been a 60% decrease in the total number of TB cases in the United States that has likely been due to increased awareness and efforts in the prevention and control of TB. Minnesota's rate remains below the national average rate. In 2011, 137 new cases of TB were reported in Minnesota. Nationwide, areas of concern include multidrug-resistant strains of TB, TB in immigrant populations and increased risk of TB for patients with HIV. A disproportionately high percentage of TB cases occur among persons incarcerated in U.S. correctional facilities, increasing the risk of transmission to employees.

*Mycobacterium. Tuberculosis*, the bacterium that causes TB, is carried through the air in tiny infectious droplet nuclei of 1 to 5 microns in diameter. These droplets may be generated when a person with

pulmonary and laryngeal TB disease coughs, speaks, sings, sneezes, or spits. When inhaled by susceptible persons, the mycobacterium in these droplets may become established in the lungs and, in some cases, spread throughout the body. After an interval of weeks, months, years, or even decades, the initial infection may progress to clinical illness (i.e., tuberculosis disease). If not treated properly, TB can be fatal. Transmission of TB is most likely to occur from persons with pulmonary or laryngeal TB who are not on effective anti-TB therapy and who have not been placed in respiratory isolation.

The employer's obligations are those set forth in the Minnesota Occupational Safety and Health Act of 1973. Recommendations for preventing the transmission of TB for health care settings were originally established with the 1990 CDC Guidelines. In October of 1994, those guidelines were revised (Reference #1). The guidelines emphasize the control of TB through an effective TB infection control program. Under these guidelines the control of TB is to be accomplished through the early identification, isolation, and treatment of persons with TB, use of engineering and administrative procedures to reduce the risk of exposure, and through the use of respiratory protection. In December of 2005, a revised "Guidelines for Preventing the Transmission of TB in Health-Care Settings" was published. This revision expands the health-care settings considered, revises the risk assessment processes, and adds advances in detection and controls. In July of 2006, "Prevention and Control of Tuberculosis in Correctional and Detention Facilities" was published. This publication provides guidelines for effective prevention and control of TB in jails, prisons and other correctional and detention facilities for both employees and inmates.

#### Definitions:

For a complete list of definitions applicable to TB, refer to the list of definitions in the 2005 CDC "Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health-Care Settings," (MMWR dated December 30, 2005) [See Reference #1 of this Instruction]. Definitions may be found in the Glossary of Definitions

#### ACTION:

##### A. Scheduling of TB-related Inspections.

1. Inspections for occupational exposure to TB shall be conducted in response to employee complaints, related fatalities/catastrophes, or as part of all compliance inspections conducted in workplaces where the CDC has identified workers as having a greater incidence of TB infection than the general population. These workplaces have been the subject of reports issued by CDC which provide recommendations for the control of TB. Specifically, covered workplaces are as follows:
  - a. Health Care Facilities (including inpatient, outpatient settings and non-traditional facility-based settings):
    - hospitals (including, but not limited to, surgery, radiology, treatment rooms, intensive-care units, emergency rooms, laboratories, bronchoscopy suites, sputum induction or inhalation therapy rooms, embalming rooms and autopsy rooms)
    - hospices
    - nursing homes
    - TB treatment facilities
    - dialysis units
    - ambulatory-care facilities (e.g., clinics)
    - laboratories processing specimens for mycobacterium studies (e.g., AFB cultures)
    - EMS (emergency medical services)
    - medical and dental offices
    - home health and outreach services

-Nontraditional settings where TB patients might be encountered including cafeterias, general stores, kitchens, laundry areas, maintenance shops, pharmacies.

Note: Health-care facilities include hospitals where patients with confirmed or suspect TB are treated or to which they are transported. Coverage of non-hospital health care settings (i.e., doctors' offices, clinics, etc.) includes only personnel present during the performance of high hazard procedures on suspect or active TB patients. Dental health care personnel are covered by the directive only if they treat suspect or active patients in a hospital or correctional facility.

- b. Correctional Institutions (including lock-up units, jails, law enforcement personnel transporting suspect or confirmed TB cases, medical settings within correctional facilities, etc.)
  - c. Homeless Shelters. (Due to a variety of circumstances, the control of TB in homeless shelters presents unique problems for the protection of workers. Shelters must establish protocols that provide for rapid early identification followed by immediate transfer of suspect cases if the shelters have elected not to treat these individuals.)
  - d. Long-term Care Facilities
  - e. Drug Treatment Centers.
2. Complaints about TB exposure received from employees in other industries are considered to be public health issues and should be referred to the appropriate public health department or agency (e.g., the county health department or the Minnesota Department of Health, Division of Disease Prevention and Control).

B. Risk Assessment

Every health-care setting shall conduct initial and ongoing evaluations of the risk for transmission of *M. Tuberculosis* regardless of whether or not patients with suspected or confirmed TB disease are expected to be encountered in the setting. The TB Risk Assessment Worksheet found in Reference 7 "Guidelines for Preventing the Transmission of TB in Health-Care Settings" may be used.

**TB Risk Assessment for Settings in Which Patients with Suspected or Confirmed TB Disease Are Expected To Be Encountered**

The initial and ongoing risk assessment for these settings should consist of the following steps:

- Review of the community profile of TB disease in collaboration with the state or local health department.
- Consult the local or state TB-control program to obtain epidemiologic surveillance data necessary to conduct a TB risk assessment for the health-care setting.
- Review the number of patients with suspected or confirmed TB disease encountered in the setting during at least the previous 5 years
- Determine if persons with unrecognized TB disease have been admitted or were encountered in the setting during the previous 5 years.
- Determine which HCWs (health care workers) need to be included in a screening program and the frequency of screening (based on risk classification)
- Ensure the prompt recognition and evaluation of suspected episodes of health-care-associated transmission of TB

- Identify areas in the setting with an increased risk for health-care-associated transmission of TB and target them for improved TB infection controls
- Assess the number of air-borne infection isolation (AII) rooms needed for the setting. At least one AII room is needed for settings in which TB patients stay while being treated. Additional AII rooms may be needed depending on the number and average stay of suspect or confirmed cases.
- Determine which types of environmental controls are needed other than AII rooms
- Determine which HCWs need to be included in the respiratory protection program
- Conduct periodic (annually, if possible) reassessment to ensure
  - proper implementation of the TB infection control plan,
  - prompt detection and evaluation of suspected TB cases,
  - prompt initiation of airborne precautions of suspected infectious TB cases,
  - functional environmental controls,
  - implementation of the respiratory protection program, and
  - ongoing HCW training and education regarding TB.
- Recognize and correct lapses in infection control.

**TB Risk Assessment for Settings in Which Patients with Suspected or Confirmed TB Disease Are Not Expected to Be Encountered.**

The initial and ongoing risk assessment for these settings should consist of the following steps:

- Review the community profile of TB disease in collaboration with the local or state health department.
- Consult the local or state TB control program to obtain epidemiologic surveillance data necessary to conduct a TB risk assessment for the health-care setting.
- Determine if persons with unrecognized TB disease were encountered in the setting during the previous 5 years.
- Determine if any HCWs need to be included in the TB screening program.
- Determine the types of environmental controls that are currently in place, and determine if any are needed in the setting. (see Environmental Controls; Appendices A and D of "Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health-Care Settings," 2005.
- Document procedures that ensure the prompt recognition and evaluation of suspected episodes of health-care-associated transmission of *M. tuberculosis*.
- Conduct periodic reassessments (annually, if possible) to ensure 1) proper implementation of the TB infection control plan; 2) prompt detection and evaluation of suspected TB cases; 3) prompt initiation of airborne precautions of suspected infectious TB cases before transfer; 4) prompt transfer of suspected infectious TB cases; 5) proper functioning of environmental controls, as applicable; and 6) ongoing TB training and education for HCWs.
- Recognize and correct lapses in infection control.

**TB Infection-Control Program for Settings in Which Patients with Suspected or Confirmed TB Disease Are Expected to be Encountered.**

The following steps should be taken to establish a TB infection-control program in these settings:

- Assign supervisory responsibility for the TB infection control program to personnel with appropriate expertise.
- Develop a written TB infection control plan that outlines a protocol for the prompt recognition and initiation of airborne precautions of persons with suspected or confirmed TB disease, and update it annually.
- Conduct a problem evaluation if a case of suspected or confirmed TB disease is not

- promptly recognized or airborne precautions are not initiated or if controls fail.
- Perform a contact investigation in collaboration with the local or state health department if health-care-associated transmission of *M. tuberculosis* is suspected. Implement and monitor corrective action.
- Collaborate with the local or state health department to develop administrative controls consisting of the risk assessment, the written TB infection control plan, management of patients with suspected or confirmed TB disease, training and education of HCWs, screening and evaluation of HCWs, problem evaluation, and coordination.
- Implement and maintain environmental controls including ~~all~~ room(s).
- Implement a respiratory protection program.
- Perform ongoing training and education of HCWs.
- Create a plan for accepting patients who have suspected or confirmed TB disease if they are transferred from another setting.

**TB Infection-Control Program for Settings in Which Patients with Suspected or Confirmed TB Disease Are Not Expected to be Encountered.**

The following steps should be taken to establish a TB infection-control program in these settings:

- Assign responsibility for the TB infection control program to personnel with appropriate expertise.
- Develop a written TB infection control plan that outlines a protocol for the prompt recognition and transfer of persons who have suspected or confirmed TB disease to another health-care setting. The plan should indicate procedures to follow to separate persons with suspected or confirmed infectious TB disease from other persons in the setting until the time of transfer.
- Evaluate the plan annually, if possible, to ensure that the setting remains one in which persons who have suspected or confirmed TB disease are not encountered and that they are promptly transferred.
- Conduct a problem evolution if a case of suspected or confirmed TB disease is not promptly recognized, separated from others, and transferred.
- Perform an investigation in collaboration with the local or state health department if health-care-associated transmission of *M. tuberculosis* is suspected.
- Collaborate with the local or state health department to develop administrative controls consisting of the risk assessment and the written TB infection control plan

Information about the incidence/prevalence of TB in Minnesota is available from the Minnesota Department of Health, Tuberculosis Prevention and Control Program at the Health Department website (<http://www.health.state.mn.us/tb>) listed under TB statistics.

The risk assessment must be conducted by a qualified person or group of persons<sup>1</sup> and usually should be determined for the entire setting. However, in certain settings (e.g. health-care organizations that encompass multiple sites or types of services), specific areas defined by geography, functional units, patient population, job type, or location within the setting might have separate risk classifications.

The results of the risk assessment will identify the risk categories in which the facility and/or

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<sup>1</sup> "Qualified person or group of persons" includes, but is not limited to, hospital epidemiologists, infectious disease specialists, pulmonary disease specialists, infection-control practitioners, health-care administrators, occupational health personnel, engineers, health care workers, or local public health personnel. More than one "qualified person" may be assigned responsibility for elements of the TB infection control program. For example, the person who conducts the risk assessment may not be "qualified" to administer and/or read Mantoux tuberculin skin tests.

occupational groups within the facility are classified. The risk category determines which elements of a TB infection control program must be implemented.

The three risk classifications are low risk, medium risk, and potential ongoing transmission. The classification of low risk should only be applied to settings in which persons with TB disease are not expected to be encountered and where exposure to clinical specimens that contain TB are not present. Therefore, exposure to *M. Tuberculosis* is unlikely.

The classification of medium risk should be applied to settings in which the risk assessment has determined that persons will or will possibly be exposed to person with TB disease or to clinical specimens that might contain *M. tuberculosis*.

The classification of potential ongoing transmission should be temporarily applied to any setting or group of HCWs if evidence suggestive of person to person (e.g. patient-to-patient, patient-to-HCW, HCW-to-patient, or HCW-to-HCW) transmission of *M. tuberculosis* has occurred in the setting during the preceding year. Evidence of person-to-person transmission includes 1) clusters of "tuberculin skin tests" (TST) or "blood assay for *M. tuberculosis*" (BAMT) conversions, 2) HCW with confirmed TB disease, 3) increased rates of TST or BAMT conversions, 4) unrecognized TB disease in patients or HCWs, or 5) recognition of an identical strain of *M. tuberculosis* in patients or HCWs with TB disease identified by deoxyribonucleic acid (DNA) fingerprinting.

If it is uncertain regarding whether to classify a setting as low risk or medium risk, the setting typically should be classified as medium risk.<sup>2</sup>

#### TB Screening Procedures:

1. All HCWs (paid and unpaid) should receive baseline TB screening upon hire, using two step TST or a single BAMT to test for infection with *M. tuberculosis*. Some HCWs may be exempt from TB screening if they will never be in contact with or share air space with TB patients or clinical samples that might contain TB disease (for example, telephone operators who work in a separate building from patients).
2. HCWs in Medium Risk settings should receive screening for TB annually
3. HCWs with a baseline positive or newly positive test result or with documentation of previous treatment for LTBI (latent form of TB) or TB disease should receive one chest radiograph result to exclude TB disease. These HCWs should receive a symptom screen annually and these employees should be educated on the symptoms of TB disease and instructed to report any symptoms immediately to the occupational health unit.
4. In settings classified as "Potential Ongoing transmission," testing may need to be performed every 8-10 weeks until no further evidence of ongoing transmission is apparent.
5. All correctional facility employees should receive initial TB screening following guidelines in the CDC Reference #8 document Periodic screening will also be needed for some employees. This document also includes information on risk categories specific to these facilities.

- C. Temporary Employees. Temporary help services that provide temporary workers to facilities covered by this directive shall be responsible for meeting the pre-assignment TB screening and medical surveillance requirements of this directive. Temporary employees must be included in

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<sup>2</sup> More information about conducting risk assessments, complete descriptions of the three risk categories, and details of the elements and characteristics of a TB infection-control program can be found in the CDC's "Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health-Care Settings, 2005".

the client (using) employer's workplace safety and health program and receive all necessary training and personal protective equipment to perform their jobs safely.

D. OSHI Protection. When conducting TB-related inspections, OSHIs are to take the following additional precautions:

1. OSHIs shall not enter occupied air-borne infection isolation (**AII**) rooms to evaluate compliance.
2. OSHIs shall not enter work areas where high hazard procedures, such as aerosolized administration of medication, bronchoscopy, and diagnostic sputum induction, are being conducted. OSHIs shall normally establish the existence of hazards and adequacy of work practices through employee interviews and shall observe them in a manner which prevents exposure (e.g., through an observation window where available).
3. In the exceptional circumstance, if entry into potentially hazardous areas is judged essential, OSHIs shall be properly equipped as required by the facility as well as by their own professional judgment, after consultation with the OMT Area Director and/or Supervisor. At a minimum, this shall include the use of a NIOSH-approved respirator equipped with N95 filters which will require having been fit-tested within the past year.
4. Photographs or videotaping, where practical, shall be used for case documentation. Under no circumstances shall photographing or videotaping of patients/clients be done. OSHIs must take all necessary precautions to assure and protect patient/client confidentiality.

INSPECTION/CITATION GUIDELINES:

A. General. The procedures given in the FCM shall be followed except as modified below:

1. Upon entry, the OSHI shall request the presence of the infection control director and employee occupational health professional responsible for occupational health hazard control.
2. The OSHI shall establish whether or not the facility has had a suspect or confirmed TB case within the previous six (6) months from the opening conference to determine coverage under the OSH Act.
3. If the facility has had a suspect or confirmed TB case within the previous six months, the OSHI shall proceed with the TB portion of the inspection. The OSHI shall verify implementation of the employer's plans for TB protection through employee interviews and direct observation where feasible. Professional judgment shall be used to identify which areas of a facility must be inspected during the walkaround (e.g., emergency rooms, respiratory therapy areas, and bronchoscopy suites). After review of the facility plans for worker TB protection, employee interviews combined with an inspection of appropriate areas of the facility shall be used to determine compliance.
4. Inspections in covered workplaces shall include a review of the employer's tuberculosis protocol which may be part of the written Employee Right-to-Know or AWAIR plans.
5. See Appendix A, "MNOSHA TB Inspection Checklist," for a list of specific questions to be addressed.

B. General Duty Clause (M. S. § 182.653, subd. 2)

1. Occupational exposure to TB is a serious and recognized hazard and certain feasible hazard abatement methods exist. Therefore, application of the general duty clause of the OSH Act is warranted. General duty clause citations must meet the requirements outlined in the Field Compliance Manual (FCM), Chapter IV, and may be issued where there is a hazard which cannot be abated by compliance with a specific OSHA standard.
2. Industry recognition for purposes of citing the general duty clause is recognition of the hazard of being infected with tuberculosis through the exposures detailed below. The workplaces covered by this directive generally recognize the determination of this hazard by the CDC which is the acknowledged authority in this area. The employer's TB program, infectious agents Right-to-Know program, or generic infection control program can also constitute evidence of knowledge and recognition.
3. Citations shall be issued only to employers with employees working in one of the workplaces where the CDC has identified workers as having a higher incidence of TB than the general population, when employees are not provided with appropriate protection, and employees have exposure defined as follows:

- a. Exposure without appropriate protection to the exhaled air of an individual with suspected or confirmed pulmonary TB disease.

[NOTE: A suspected case is one in which the facility has identified an individual as having symptoms consistent with TB. Symptoms suggestive of TB include a cough lasting  $\geq 3$  weeks, especially in the presence of other symptoms compatible with TB (e.g., weight loss, night sweats, bloody sputum, anorexia, or fever).

- b. Employee exposure to a high hazard procedure performed on an individual with suspected or confirmed infectious TB disease and which has the potential to generate infectious droplet nuclei. Examples of high hazard procedures include aerosolized medication treatment, bronchoscopy, sputum induction, endotracheal intubation and suctioning procedures, emergency dental procedures, endoscopic procedures, and autopsies conducted in hospitals.
4. The hazard, not the absence of a particular means of abatement, is the basis for the general duty clause citation. All applicable abatement methods identified as correcting the same hazard shall be issued under a single general duty clause citation. The following are examples of feasible and useful abatement methods. Failure to use the abatement methods required for the facility as determined by the risk assessment may result in the continued existence of a serious hazard and may, therefore, allow citation under the general duty clause:
    - a. **Early Identification of Patient/Client.** The employer shall implement a protocol for the early identification of individuals with active TB.
    - b. **Medical Surveillance:**
      - i. **Initial Exams.** The employer, in covered workplaces, shall offer Mantoux TB skin tests, QuantiFERON-TB Gold In-Tube blood test, T-SPOT TB blood test or other FDA approved tests (at no cost to the employees) to all current potentially exposed employees and to all new employees prior



to exposure (immediately upon the employee's start date).<sup>3</sup> In cases where the employee has been BCG-vaccinated, a blood test should be used. If the Mantoux TB skin test is used, a two-step baseline shall be used for new employees who have an initially negative Mantoux TB skin test result and who have not had a documented negative TB skin test result during the preceding 12 months. TB tests shall be offered at a time and location convenient to workers. MNOSH will accept testing protocols approved by FDA for the detection of TB exposure providing that FDA has approved such test and the protocols are followed as approved by FDA.

NOTE: The reading and interpretation of the Mantoux TB skin tests and blood tests shall be performed by a qualified individual as described in the CDC Guidelines.

- ii. Periodic Evaluations: TB testing shall be conducted annually for workers in a medium risk setting. Workers with a documented positive tuberculin skin test or blood TB test who have received treatment for disease or preventive therapy for infection are exempt from further TB testing but must be screened annually for symptoms of TB disease. [Under these OSHA guidelines, employees may refuse to participate in the testing program. However, other regulatory, statutory or licensing requirements may supersede these guidelines and make participation in the testing program mandatory.) For workers in a low risk setting, annual TB testing is not required unless an exposure to TB has occurred. For workers in a low risk setting who had a positive test result for TB infection, further assessment is not required unless symptoms or signs of TB disease develop or is recommended by a clinician.] See CDC's "Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health-Care Settings," 2005, MMWR Vol. 54, No. RR-17, Appendix A for definition of low risk and medium risk classification for health care workers.

NOTE: If the facility has not completed a risk assessment, the OSHI shall review the TB-related records to establish required testing frequencies for the facility and areas of the facility.

If the employer had made a risk assessment and determined that the employee's exposure is low risk **and** there is evidence of employee exposure to an active TB case, the OSHI shall carefully evaluate the basis on which the employer made the determination that the risk category was low. Factors to consider when making the risk assessment include the past incidents in the facility, the incidence of TB in the community, the type of services provided, and the immune system status of the clients' served. Consultation with the local health department is also recommended by the CDC guidelines in determining the risk classification. If the basis on which the determination of "low

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<sup>3</sup> A new employee who tests positive in the initial test is presumed to have been infected prior to beginning work at the facility. An employer may accept documentation of a negative Mantoux TB skin test done within the preceding three months in lieu of testing upon hire. However, a future positive skin test for TB will be considered to be work-related and, therefore, recordable on the OSHA 300 log.

risk” classification was deficient, failure to provide annual testing shall be cited under the General Duty Clause.

- iii. Reassessment following exposure or change in health: Workers who experience exposure to an individual with suspect or confirmed infectious TB for whom infection control precautions have not been taken shall be managed according to CDC recommendations, including appropriate work restrictions. An employee who develops symptoms of TB disease shall be immediately (within 72 hours) evaluated according to the CDC Guidelines.
- iv. All medical surveillance requirements, including initial exams, Mantoux TB skin tests, blood TB tests, periodic evaluations, and treatment must be offered at no cost to employees.
- c. **Case Management of Infected Employees.** Management of infected employees shall include the following:
  - i. Protocol for New Converters. Conversion to a positive TB skin test shall be followed as soon as possible by appropriate physical, laboratory, and radiographic evaluations to determine whether the employee has infectious TB disease.
  - ii. Work Restrictions for Infectious Employees. Workers with confirmed infectious TB should be excluded from the workplace until the criteria listed in the CDC guidelines have been met.
- d. **Worker Education and Training.** Training and information to ensure employee knowledge of such issues as the mode of TB transmission, its signs and symptoms, medical surveillance and therapy, and site specific protocols including the purpose and proper use of controls shall be provided to all current employees and to new workers upon hiring.

Workers shall be trained to recognize, and report to a designated person, any patients or clients with symptoms suggestive of infectious TB and instructed on the post exposure protocols to be followed in the event of an exposure incident.

Training on TB can be part of the employer’s Employee Right-to-Know program and must be updated annually.
- e. **Engineering Controls.** The use of each control measure must be based on its ability to abate the hazard.
  - i. Individuals with suspected or confirmed infectious TB disease must be placed in an airborne infection isolation (**AII**) room. High hazard procedures on individuals with suspected or confirmed infectious TB disease must be performed in **AII** treatment rooms, **AII** isolation rooms, booths, and/or hoods. **AII** isolation refers to a negative pressure room or an area that exhausts room air directly outside or through HEPA filters if recirculation is unavoidable. [“High hazard procedures” includes those procedures which have a potential to generate infectious droplet nuclei such as aerosolized medication treatment, bronchoscopy, sputum induction, endotracheal intubation and suctioning procedures, emergency dental procedures, endoscopic procedures, and autopsies conducted in hospitals.]

- ii. Isolation and treatment rooms in use by individuals with suspected or confirmed infectious TB disease shall be kept under negative pressure to induce airflow into the room from all surrounding areas (e.g., corridors, ceiling plenums, plumbing chases, etc.). For more guidance on the requirements for ventilation and engineering controls, see MMWR Vol. 52/ No. RR-10 June 6, 2003, "Guidelines for Environmental Infection Control in Health-Care Facilities". [ Note: there is an erratum that is also published for this MMWR.]
5. If a facility has a policy in place which prohibits the admission of anyone with TB, they should at least have a protocol in place for determining the status of incoming patient/clients and a protocol for dealing with those situations where a suspected case comes in. This protocol should be part of the written Employee Right-to-Know or AWAIR program.
6. If a citation is justified under the general duty clause, the citation shall, after setting forth the SAVE for 182.653, subd. 2, state:
 

"[Specify job classifications such as doctors, nurses, prison guards, etc.] employees at [specify location] were exposed to the hazard of being infected with tuberculosis through contact with [specify group such as patients, inmates, clients, etc.] who were or may be infected with tuberculosis in that: [list exposure as detailed above].

Feasible and useful abatement methods for reducing this hazard, as recommended by the Centers for Disease Control, among others are: [list abatement methods as detailed above]."
7. Failure to have a written protocol for TB-related cases and failure to train employees in tuberculosis are citable under the Employee Right-to-Know standard. Failure to train employees in the proper use of respiratory protection is citable under 1910.134.

C. 1910.134 - Respiratory Protection

1. The Respiratory Protection standard provides, in part, that appropriate respirators shall be provided by the employer when necessary to protect the health of employees. The standard also requires the employer to establish and maintain a respiratory protection program. All requirements of 1910.134 apply to respirators used for protection against occupational exposure to TB.
2. The 2005 CDC Guidelines specify that respirators should meet the following requirements:
 

Certification by CDC/National Institute for Occupational Safety and Health as a non-powered particulate filter respirator (N-,R-, or P-95, 99, or 100), including disposable respirators, elastomeric full-face respirator or PAPRs.
3. Employees must wear a respirator certified at N95 or higher in the following circumstances:
  - a. When workers enter rooms housing individuals with suspected or confirmed infectious TB (this also includes public health workers, home health care workers, and others who enter homes or other settings that house individuals with suspected or confirmed infectious TB);

- b. When workers are present during the performance of high hazard procedures (see definition in paragraph B.4.e.i.) on individuals who have suspected or confirmed infectious TB (CDC recommends elastomeric full-face respirator or PAPR during these procedures but a N95 disposable respirator is the minimum requirement); and
- c. When emergency-medical-response personnel or others (such as law enforcement personnel) transport, in a closed vehicle, an individual with suspected or confirmed infectious TB.

D. 1910.1020 - Access to Employee Exposure and Medical Records

- 1. A record concerning employee exposure to TB is an employee exposure record within the meaning of 1910.1020 and must be maintained by the employer in accordance with the requirements of 1910.1020. Employees may access their medical records under this standard.
- 2. A record of TB skin testing or BAMT results and medical evaluations and treatment are also employee medical records within the meaning of 1910.1020. Where known, the worker's exposure record should contain a notation of the type of TB to which the employee was exposed (e.g., multi-drug resistant TB).

E. 1910.145 - Accident Prevention Signs and Tags

- 1. Section 1910.145(f)(8) requires a warning to be posted outside the respiratory isolation or treatment room. Section 1910.145(f)(4) requires that a signal word (one of the following is required: "Danger," "Biological Hazard" or "BIOHAZARD") or biological hazard symbol be present. A major message (e.g., "Special Respiratory Isolation," "Respiratory Isolation," or "All Isolation") or a description of the necessary precautions (e.g., Respirators must be donned before entering) is also required to be posted. Respiratory isolation rooms in an emergency department must be similarly posted or a message referring individuals to the nurses' station for instructions must be posted.
- 2. The employer shall also use biological hazard tags on ventilation system components (e.g., fans, ducts, filters, etc.), which identify TB hazards to employees associated with working on air systems that transport contaminated air.

F. Minnesota Rules Chapter 5206 - Employee Right-to-Know

- 1. Employee Right-to-Know requires training and information to be provided to employees who may be routinely exposed to infectious agents, which includes tuberculosis. Employers in the covered facilities must describe their TB protocol (e.g., identification protocol, medical surveillance for employees, isolation precautions, etc.) as part of their written Employee Right-to-Know program.
- 2. Cite 5206.0700, subpart 4, for failure to train employees on tuberculosis. Cite 5206.0700, subpart 1(b) when the employer's written program is otherwise complete but fails to include a description of the facility's TB protocol.

G. Part 1904.11 – Recording Criteria for Work-related Tuberculosis Cases

- 1. Under Part 1904.11, a case of tuberculosis must be recorded if the employee has active TB (diagnosis by a physician or other licensed health care professional) or has a

May 21, 2013

positive skin test. The case is considered work-related if the employee has been occupationally exposed at work to another person (client, patient, co-worker, customer, or other work contact) with a known, active case of tuberculosis. The case must be recorded on the OSHA-300 Log by checking the "respiratory condition" column (Column M-3).

- a. A pre-employment positive skin test or a positive skin test provided within 2 weeks of hire prior to any potential workplace exposure does not need to be recorded on the OSHA-300 Log because it is presumed the exposure occurred outside the workplace.
2. An employer is not required to record a case involving an employee who has a positive skin test and who is exposed at work if:
  - a. the worker is living in a household with a person who has been diagnosed with active TB;
  - b. the Public Health Department has identified the worker as a contact of an individual with a case of active TB unrelated to the workplace; or
  - c. a medical investigation shows that the employee's infection was caused by exposure to TB away from work or proves that the case was not related to the workplace TB exposure.

A recorded TB case may be lined out or erased from the OSHA 300 Log if subsequent information demonstrates that the case is not related to a workplace exposure.

**VIOLATIONS:** Violations of these requirements will normally be classified as serious.

#### **RECORDING IN MOOSE**

A TB-related inspection is any inspection conducted to investigate the presence or alleged presence of TB disease (i.e., a referral or complaint inspection).

1. When a TB-related inspection is conducted, enter the inspection in MOOSE as for any inspection and enter the code "N 02 TB" in Item 42, Optional Information.
2. When a complaint is entered and the complaint alleges the presence of TB hazards, enter the code "N 02 TB" in Item 35, Optional Information.
3. When an referral is entered and the referral alleges the presence of TB hazards, enter the code "N 02 TB" in Item 29, Optional Information.

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James Krueger, Director MNOSHA Compliance  
For the MNOSHA Management Team

**Distribution:** OSHA Compliance and WSC Director

**Attachments:** Appendix A -- TB Inspection Checklist

**NOTICE:** Minnesota OSHA Directives are used exclusively by MNOSHA personnel to assist in the administration of the OSHA program and in the proper interpretation and application of occupational safety and health statutes, regulations, and standards. They are not legally binding declarations and they are subject to revision or deletion at any time without notice.

## APPENDIX A

### MNOSHA TB INSPECTION CHECKLIST Specific Questions to Address

#### I. ASSIGNMENT OF RESPONSIBILITY

- ☐ Does the facility have a qualified person(s) assigned to oversee the infection control program and training of employees?

#### II. RISK ASSESSMENT

- ☐ Has the facility conducted a risk assessment to evaluate the risk of transmission of TB?
- ☐ What level(s) of risk have been classified for the facility or groups/areas of the facility?

Medium, low, or ongoing risk level (or minimal/ nonminimal risk for correctional facilities)?

For inpatient settings with 200 beds or more, if 6 or more TB clients have been seen in the past year, it is classified as medium risk. If less than six clients have been seen in the setting the last 1 year, then the classification is low risk.

For inpatient settings with less than 200 beds and for outpatient and non-traditional facilities, it is classified as medium risk if three or more TB clients have been seen in the past year. If less than three clients, then the classification is low risk.

If there is evidence of person to person transmission at any facility, then the risk category would be "Potential Ongoing Transmission" and frequent testing as often as every 8-10 weeks until lapses in infection control have been corrected may need to be done. The setting should then be considered a medium risk setting for at least one year.

- ☐ Has the facility **treated** suspect/active cases of TB?

If yes, the # of suspect cases within the last 6 months; last 12 months.

If yes, the # of active cases within the last 6 months; 12 months.

- ☐ # of TB cases identified but not admitted in the facility -- in the last 6 months; last 12 months

- ☐ Has the facility **treated** cases of multi-drug resistant TB?

If yes, # of cases currently and within the last 6 months.

#### III. EXPOSURE CONTROL PLAN

- ☐ Does the facility have a written exposure control plan that meets the requirements of 29 CFR 1910.1030 (Bloodborne Pathogens) that covers TB?
- ☐ Has TB been included in the employer's Right-to-Know training?

When was the last training conducted?

What departments have been included in the training?

- ☐ Does the facility have a written protocol for early identification (screening) of individuals for suspect or active cases of TB upon entering the facility?

If yes, in what areas is this protocol conducted?

- ☐ Does the facility treat suspect/active cases of TB?

If yes, is there a written protocol addressing actions to be taken upon identification?

- ☐ If the facility does not perform high hazard procedures or does not have the engineering controls needed to accept suspect/active cases of TB, is there a written protocol outlining action to be taken by the employer/employee?

#### **IV. OSHA 300 LOG RECORDKEEPING**

- ☐ Have there been any employees with a skin test conversion (i.e. change from baseline negative to a later positive) or a positive blood test after initial screening?

If yes, document the # of employees.

Have the positive test conversions been documented on the OSHA 300 log?

- ☐ Have any employees been put on a workplace restriction from having active TB?

#### **V. MANTOUX TB SKIN TESTING AND/OR BAMT**

- ☐ Does the facility have designated, trained personnel administering, reading and interpreting the Mantoux TB skin test offered to employees?

- ☐ Has Mantoux TB skin testing (best for baseline) or blood test been offered to employees at the following intervals:

\* Initial Hire (immediately upon hire) - unless the employee has documentation of a skin test in the last 3 months

Has a 2-step baseline been offered to new hires who do not have documentation of a positive TST result or have not been previously treated for LTBI or TB disease?

\* Initial Hire (immediately upon hire) - the employee has documentation of a negative skin test in the last 3 months

The negative test should be considered the first step of the baseline two-step TST. Was the 2<sup>nd</sup> step offered upon hire?

\* 12 month intervals (annual) for employees with negative test result considered "medium risk"?

\* More frequently for facilities in "ongoing risk" category?

#### **VI. ENGINEERING CONTROLS NECESSARY FOR TREATING SUSPECT/ACTIVE CASES**

- ☐ Upon identifying a suspect/active case of TB, are there negative pressure isolation rooms available?

If yes, where and how many?

- ☐ Are there local exhaust devices (booths, tents, hoods) having negative pressure used for high hazard procedures?  
If yes, where and how many?
- ☐ Is there periodic verification of negative pressure maintenance? (e.g., smoke trail testing)  
If yes, what type of verification and how often?
- ☐ Is the ventilation from the negative pressure room/device recirculated through HEPA filters or exhausted directly outside?
- ☐ Are isolation rooms being occupied by TB cases identified following 1910.145 to provide message of necessary precautions?
- ☐ Are air systems transporting contaminated air labeled to inform employees working on the system of TB-related hazards?

**VII. RESPIRATORY PROTECTION**

- ☐ Where in the facility is respiratory protection being worn by employees?
- ☐ Type of respiratory protection worn by employees:
- ☐ Has respirator program been fully implemented?

**VIII. POST EXPOSURE MANAGEMENT**

- ☐ Employees experiencing a positive skin test conversion or symptoms of TB need to be involved in a post-exposure management program for followup evaluation or possible treatment.
- ☐ Are immunosuppressed workers removed from all possible contact with individuals possibly infected with TB?
- ☐ Have there been any exposure incidents (i.e. incidents where employees were directly exposed to an active case of TB without the use of engineering controls or respiratory protection)?

# of skin tests or blood tests given following the exposure incident  
# of skin test conversions/positive blood tests following the exposure incident  
# of employees developing disease after the exposure incident.